

MANAGING SOLID WASTE

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Indiana Composting Facilities: 2001 Update

This volume updates volume 6, number 1 of *Managing Solid Waste*, "Indiana Composting Facilities: 2000 Update." See volume 3, number 2 of *Managing Solid Waste*, "Indiana Composting Facilities" for a detailed summary and history of Indiana composting facilities from 1994 through 1997.

Composting allows for the reclamation and reuse of materials such as discarded vegetative matter that would otherwise end up in Indiana's landfills and incinerators. The Indiana Department of Environmental Management (IDEM) administers a registration and annual reporting program for facilities composting vegetative matter. Historically, Indiana composting facilities process between 200,000 and 275,000 tons of vegetative matter annually (although in 2000 this amount increased to 330,525 tons) mostly leaves, wood, brush, and mulch. Between 35 and 45 percent of the compost produced each year is given away by local governments as part of their reuse and recycling efforts.

This paper is the 13th in the series *Managing Solid Waste* by the IDEM Office of Land Quality. For more information, contact the Facilities Data Analysis Section at (317) 233-4624. A copy of this paper can be downloaded at <http://www.IN.gov/idem/land/pubsforms/papers.html>.

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INTRODUCTION

Composting is the transformation of vegetative matter and other organic materials into a humus (or compost) better suited as fertilizer than the original materials. The transformation is accomplished through natural biochemical processes. Composting is one of the main processes used to reclaim and reuse vegetative matter. Other processes include mulching and land application.

According to most recent U.S. Environmental Protection Agency statistics (1999, updated September 2001), yard wastes make up approximately 12% by weight of the municipal solid waste stream nationally. This includes mostly vegetative matter like leaves, brush, wood, and grass. The diversion of these materials from final disposal can increase the life of Indiana landfills. In addition, the re-use of discarded vegetative matter as either compost or mulch decreases the use of chemical fertilizers and other landscaping products that can have large negative environmental impacts.

At the end of 2001, there were 94 registered composting facilities in Indiana. This is an increase from the 50 facilities registered in 1994, the first year registration was required, and an increase from 88 registered facilities in 2000. More than half of Indiana counties have at least one composting facility. It is important to note that several facilities were inactive at some point during the last five years. 1998 through 2001 totals are listed separately from previous year totals because prior to 1998, facilities submitted receipt totals in volume units; beginning in 1998, facilities submitted all data in tons. Thus, 1998 - 2001 figures are not comparable with those in previous years.

Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2000 and 2001			
County	Facility	Tons Received 2000	Tons Received 2001
Adams	City of Berne WWTP	487	652
Adams	Decatur Compost Facility	1,199	1,257
Allen	Advanced Turf	57	57
Allen	Martin Service Systems	2,795	1,895
Allen	National Serv-All Compost	4,661	4,415
Allen	New Haven Utility Maintenance Center	opened 2001	440
Bartholomew	Columbus- Bartholomew Yard Waste Site	8,125	7,963
Boone	Green Cycle Whites Town Site	4,009	7,128
Boone	Lamb Farms, Inc	4,341	6,104
Cass	Cass Co. SW Composting Site	4,247	4,475
Clark	Clark County Compost	18,986	8,090
Clark	Earth First of Kentuckiana Inc	1,220	7,220
Clark	Koetter & Smith	273	670
Daviess	City of Washington Composting Facility	7,569	1,970
Dearborn	Greendale Composting	2,025	1,950
Decatur	Decatur Hills Inc.	3	0
Dekalb	Dekalb Co. Yard Waste Composting	3,453	4,988
Elkhart	City of Goshen Composting	1,855	2,030
Elkhart	Elkhart Co. Landfill	78	165
Elkhart	Elkhart Environmental Center	10,100	7,502
Fayette	City of Connersville Compost Facility	1,105	1,240
Floyd	Earth First of Kentuckiana Inc.	7,144	4,235
Fountain	Fountain Co. Recycling Station/Compost Site	87	95
Fountain	Harrison Steel Castings Compost Site	19	18
Franklin	Brookville WWTP Compost Facility	128	127
Grant	Bank View Farms Compost	3,000	62
Grant	Gas City Composting	475	365
Grant	Grant Co Compost Facility	77	24
Grant	Hoosier Organic Drop-Off & Mulch Recycling Center	20	0
Grant	IRA Stair Compost Facility	120	0
Hamilton	Creative Landscaping and Compost Co.	4,261	4,712
Hendricks	Plainfield Correctional Facility	2,984	2,827
Howard	City of Kokomo Yard Waste Composting	2,970	2,125
Huntington	City of Huntington Landfill Composting	2,218	1,162
Jackson	Seymour City Composting Facility	1,701	3,746
Jasper	Town of DeMotte Compost Facility	opened 2001	0
Jasper	Town of DeMotte Compost Facility #2	opened 2001	150
Jefferson	City of Madison T.S.	1,094	1,187
Jefferson	Town of Hanover Composting Facility	330	332
Johnson	New Whiteland WWTP	opened 2001	188
Kosciusko	City Warsaw Compost	7,781	1,056
Kosciusko	Recycle Site	opened 2001	792
Kosciusko	Superior Excavating	674	890
La Porte	Westville C.F. Compost Site	3,504	2,949
Lagrange	LaGrange Co. Yard Waste Composting	2,132	410
Lagrange	Shipshewana WWTP	57	59
Lake	BioGreen, LLC	opened 2001	3,497
Lake	Fertile Earth Gary Compost Facility	13,929	9,402
Lake	Greencycle of Indiana E. Chicago Facility	3,678	2,577

Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2001 and 2000 (continued)			
County	Facility	Tons Received 2000	Tons Received 2001
Lake	Stuhlmacher Soil Service, Inc.	215	48
Lake	Town of Griffith Landfill	2,835	2,953
Lawrence	Lawrence County Compost	385	600
Madison	Adams Compost Facility	300	0
Madison	Pendleton CF Compost	346	345
Marion	Greencycle of Indiana	23,863	23,472
Marion	Southside Landfill	8,326	8,780
Marion	Tiffany Lawn and Garden Supply Inc	38,000	45,000
Marion	Town of Cumberland	475	374
Marshall	Van Vactor Farms Inc.	426	410
Monroe	Good Earth Composting	463	395
Monroe	Topsoil Composting Service	3,005	4,568
Morgan	Greendell Farm	1,000	30
Noble	Ligonier Compost	88	257
Pike	Velpen C/D Landfill, Inc.	102	834
Porter	Crocker Composting Site	1,562	4,466
Porter	Valparaiso Municipal Composting Site	3,568	6,319
Pulaski	Town of Francesville	177	145
Pulaski	Town of Winamac	246	249
Putnam	Putnamville Correctional Facility	51,583	306
Randolph	City of Winchester Compost	490	456
Randolph	Randolph Farms, Inc.	2,790	2,197
Shelby	Caldwell Landfill	1,141	920
St. Joseph	Household Hazardous Waste and Recycling Center	2,219	2,325
St. Joseph	Organic Resources	28,433	34,868
St. Joseph	Pioneer Southern Horticultural Products	73	79
Steuben	Steuben Co. Yard Waste Composting	1,528	2,788
Sullivan	Wabash Valley Correctional Facility	494	900
Tippecanoe	Purdue University	300	0
Tippecanoe	Tippecanoe Co. Compost Facility	821	933
Tipton	City of Tipton Composting Facility	1,279	1,199
Vanderburgh	Botanical Service Ctr	opened 2001	243
Vanderburgh	Laubscher Meadows Composting Facility	7,909	8,711
Vigo	Victory Landfill	3,895	2,051
Vigo	White Violet Center	98	98
Wabash	The Compost	110	160
Washington	Washington Co. SWMD Composting	3,585	3,760
White	Transfarm, Inc.	3,000	1,773
Whitley	City of Columbia Compost Facility	424	245
TOTAL		330,525	276,455

NOTE: Facilities currently registered but not receiving compost in either 2001 or 2000 are not listed in Table 1.

Indiana Composting Facilities

REGULATORY AND OPERATIONAL REQUIREMENTS

In 1992, the Indiana Legislature approved Public Law 84, now codified as IC 13-20-9. This law includes a restriction on disposal of vegetative matter. The ban applies to residential, commercial, and industrial sources. IDEM has issued guidance to interpret what materials are subject to the ban. (See Table 2. More information regarding the yard waste ban appears in the nonrule policy document “Important Notice Regarding the Yard Waste Disposal Ban,” available from IDEM’s Office of Land Quality.) This ban makes composting facilities an essential facet of solid waste management.

Composting facilities are required by state law to register with IDEM. Each registration is valid for five years, and can be renewed by submitting an updated registration form to IDEM 90 days prior to expiration.

There is no fee for registration or renewal. Composting operations that process less than 2,000 pounds of vegetative matter during a year are exempt from these registration requirements.

In addition to the registration requirements, the law requires that the facility operator submit an annual report to IDEM. The Composting Facility Annual Report indicates the amount of vegetative matter processed during the previous year, and the final use of the compost. The first reporting year was 1994.

MATERIALS PROCESSED

The 84 facilities active in 2001 accepted approximately 276,000 tons of organic materials. This decrease from the 2000 total of 331,000 is due to an overall decrease in

Table 2. Summary of Indiana’s Yard Waste Ban		
Materials SUBJECT to Yard Waste Disposal Ban	●	Leaves
	●	Brush
	●	Woody vegetative matter greater than 3 feet in length
Materials EXEMPT from Yard Waste Disposal Ban	●	Grass
	●	Woody vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length
	●	Very small amounts of vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length AND combined with other solid waste
	●	Christmas trees
	●	House plants
	●	Vegetable food scraps
	●	Vegetative by-products not derived from landscaping maintenance or land clearing projects such as from flower shops and funeral homes
	●	IDEM-approved composted vegetative matter used as cover material for solid waste landfill

tons received. Eight facilities had decreases of over 2,500 tons from 2000 receipts, including one site with a decrease of over 51,000 tons. Tons reported accepted is an approximation for two reasons:

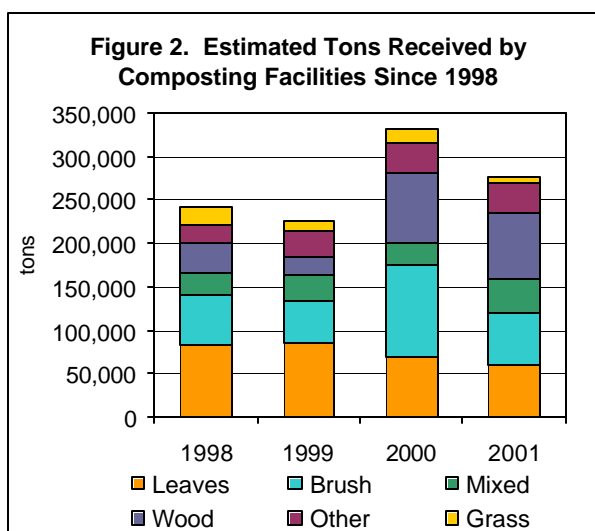
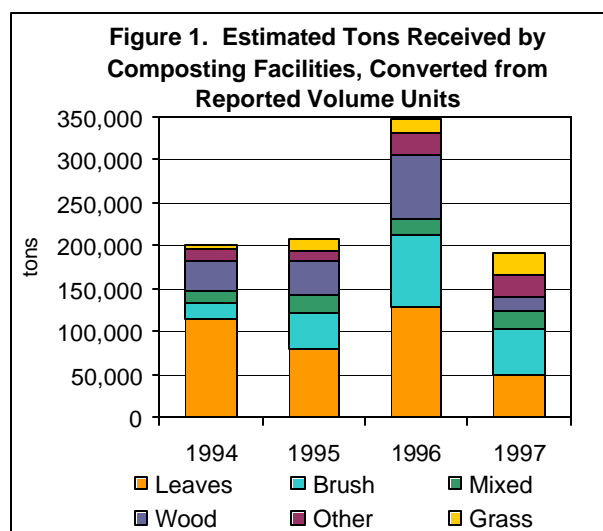
1. Beginning in 1998, composting facilities are required to report their intake in tons. Many facilities do not have weigh scales, and must convert volume measurements to weight based on conversion factors such as those in Table 3. Volume-to-weight conversion factors vary widely depending on the composition, moisture content, and compaction rate of the vegetative matter.
2. Some loads of materials are received in a manner that prohibits documentation by type and/or weight, especially small loads from residential customers. In 2001, 36 of the 84 active facilities or 43% received such undocumented loads.

Indiana Composting Facilities

As shown in Figures 1 and 2, leaves accounted for a significant portion of total receipts through 1999. In 2000, wood and “other” materials (including 38,000 tons of mulch received by a facility reporting for the first time) accounted for the majority of receipts by weight.

Table 3. Examples of Conversion Factors for Compostable Materials (Cubic Yards Per Ton)

Material Description	Loose	Compacted
Brush	6.67	2.20
brush, shredded	5.37	--
Cardboard	6.67	--
food waste	1.30	--
Grass	5.00	2.50
Leaves	10.00	5.00
leaves, shredded	6.70	5.71
mixed yard waste, fall	8.10	3.60
mixed yard waste, summer	5.70	2.60
Paper	4.00	--
whole wood	7.14	5.88
wood, chipped	4.00	3.60



FINAL USES OF COMPOST AND OTHER PRODUCTS

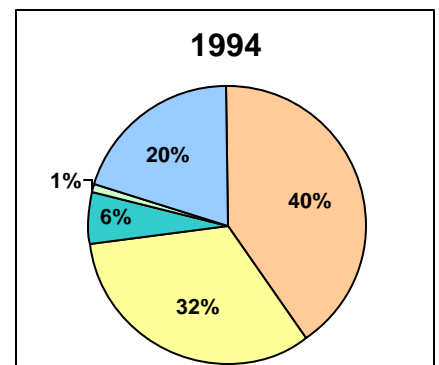
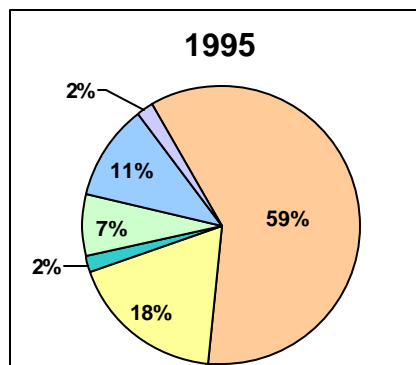
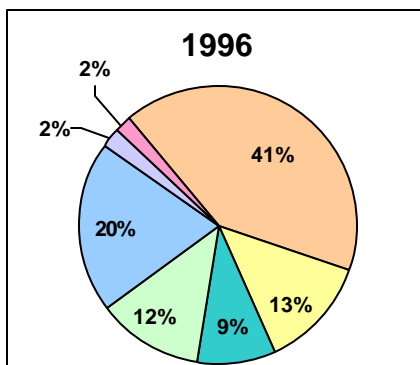
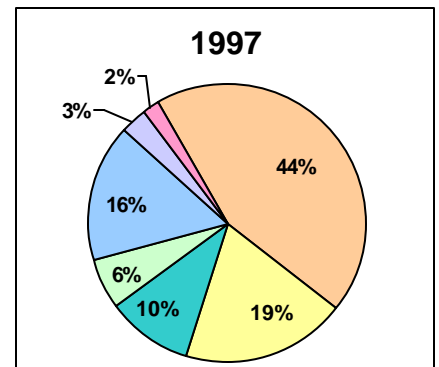
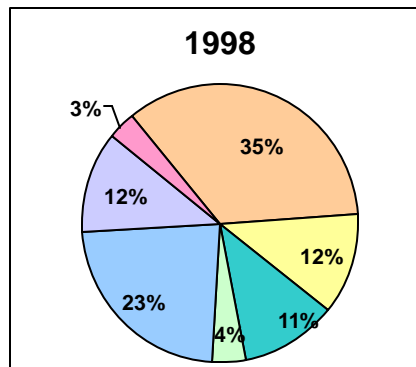
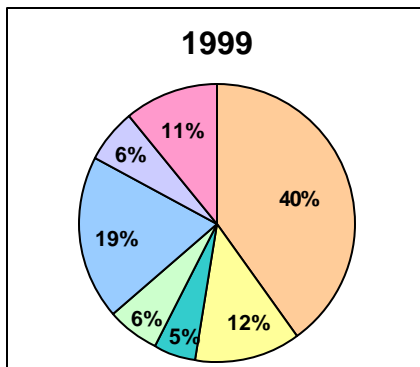
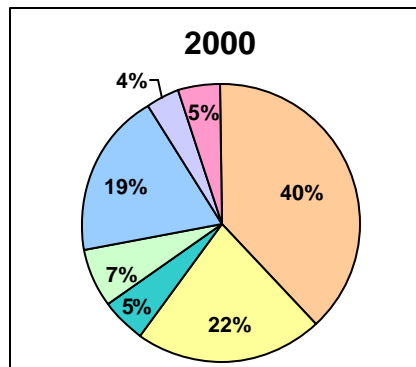
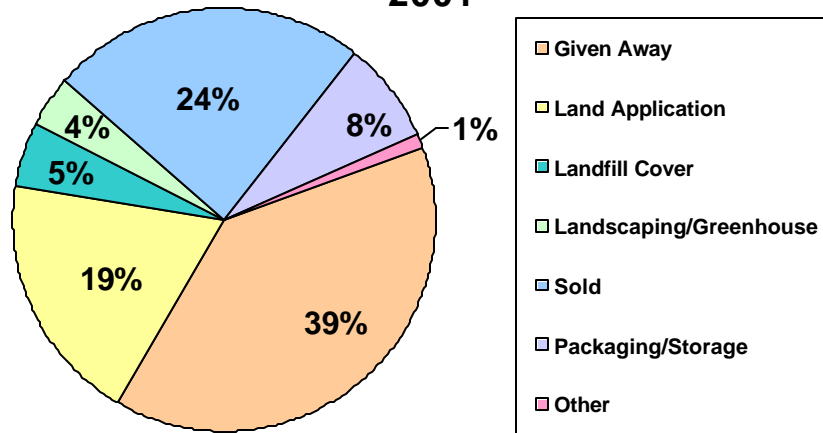
Composting facilities may produce finished compost in as short as three months or as long as two years, depending on the type of raw materials, ambient temperature, and processing methods. At the end of 2001, 33% of the materials managed by Indiana registered composting facilities were still in the process of being converted to compost. Over the last eight years, materials received and still in process of being converted to

compost at year end ranged from 33% to 50%.

Figure 3 shows the final uses of materials that were successfully converted into either compost or mulch during the last eight years. In 2001, facilities gave away 39% of total converted product, a 1% decrease from the amount given away in 2000. Facilities giving away product are primarily those run by cities, counties, or solid waste management districts.

Indiana Composting Facilities

Figure 3. Final Uses for Compost by Percent During 2001



REFERENCES AND FURTHER READING

Indiana Environmental Statute IC 13-20-9,
Restrictions on Disposal of Vegetative Matter

Indiana Department of Environmental Management
Nonrule Policy Document, *Important Notice Regarding the Yard Waste Disposal Ban*, January 2000

Indiana Department of Environmental Management
and the Indiana Recycling Coalition, *Indiana Yard Waste Solutions*; January 1993

U.S. Environmental Protection Agency, Office of
Solid Waste and Emergency Response, *Municipal Solid Waste in the United States: 1999 Facts and Figures* (www.epa.gov/epaoswer/non-hw/muncpl/pubs/mswfinal/pdf)